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ABSTRACT

This study compared the concepts of oral and written language of 4-year-old, preschool children from low- and middle-class homes. Subjects were 64 children from 3 preschools serving families at poverty level, and 3 preschools serving middle-income families. Children's understanding of the function of print was measured by three tasks: recognizing environmental print, identifying literacy artifacts, and describing the functions of literacy objects. Children's understanding of the form and structure of print was measured by six tasks: (1) identifying alternative forms of written language; (2) identifying letter names; (3) identifying letter sounds; (4) blending syllables into words; (5) blending phonemes into words; and (6) constructing invented spellings. Parents completed a questionnaire that measured the frequency and quality of literacy experiences in which parents engaged with their children. Results indicated that children from middle-class families outperformed children from low-income homes on eight of the nine tasks. Differences were found between middle-class and low-income parents' reports of frequency and quality of literacy experiences with their children. A list of 18 references is provided. (BC)

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RUNNING HEAD: LANGUAGE CONCEPTS

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The Language Concepts that Low- and Middle- Class Four-Year-Olds Bring to Preschool

A perplexing issue that continues to plague American schools is the inevitable failure of children from economically poor families to acquire literacy skills at levels comparable to their middle-class counterparts. Each year these learners fail in disproportionate numbers and their difficulties in learning to read and write are apparent from almost the beginning of school. In the past two decades considerable evidence has been accumulated to indicate that becoming literate may be linked to the language concepts that children acquire through informal experiences with print prior to entering school (Bissex, 1980; Clay, 1972; Ferreiro & Teberosky, 1982).

In a recent study that investigated the language knowledge of low-SES kindergartners, Purcell-Gates (1989) noted that the children appeared to hold a very restricted view of written language. The author suggested that limitations found among low- SES kindergartners reflected an inadequate exposure to print during preinstruction years. From this premise, children from low-income families become at-risk of learning to read and write long before they ever begin school. These conclusions would tend to support a general belief about children of the poor; however, without a comparison group of middle- class kindergartners the interpretations are tempered.

In contrast, Teale (1986) investigated the literacy experiences of 24 low-income preschoolers and concluded that although there was an absence of story book reading in these homes, economic circumstances did not in any way restrict the amount or richness of literacy experiences (p.193). His interpretations corroborate the work by other ethnographers (e.g., Heath, 1983;) and provide rich descriptions of low-SES preschoolers' interactions with written language. Nonetheless, these ethnographic studies also lacked a middle-class comparison group to substantiate their opposing view. Some researchers (Harste, Woodward, Burke, 1984; Taylor and Dorsey-Gaines, 1988) have attempted to provide a comparative structure to ethnographic studies by comparing

their findings with data reported in earlier investigations. Although their studies yield impressive findings, these conclusions must also be viewed with caution.

Hence, to date, a comparative study that examines the differences between the literacy concepts held by low-and middle-class preschoolers has not been conducted. A clear understanding of the limitations that may be unique to children from low- socioeconomic status is needed. Therefore, the current study was conducted to address a serious void in the literature by comparing the oral and written language concepts that four- year- olds from low- and middle-class homes are likely to bring to preschool.

Applying Mason's model (1984) of early reading acquisition, measures were selected to assess children's concepts about the function of print as well as the form and structure of print. Accordingly, these two strands reflect the initial concepts needed for understanding reading. Function of print is described by Mason as attempts to read words in print using their meanings. This includes the ability to recognize signs, labels, names, and labeled food products. The second strand, form and structure of print, is an explicit awareness that letters have distinct forms and can be related to word sounds. This includes knowledge of letter names, letter sounds, and concepts about combining sounds to form words.

Methods

Subjects- The study was initiated with sixty-four children drawn from six separate preschools. Each preschool was located at a separate site in a mid-size, Midwest city. The preschools were selected because of the particular populations they served. Three Head Start preschools were identified which serve families at 100% poverty level and three tuition-based preschools were selected which serve children from middle-income homes. Only four-year-olds who spoke English as their primary language were identified to participate in the study. Using a table of random numbers children's names were selected from each of the preschool's class lists. Thirty-three children from three separate Head

Start programs and thirty-one children from three different private preschools were administered the language assessments.

Procedures- Nine informal tasks were individually administered to the preschoolers to assess their knowledge of written language. To measure children's understanding of the function of print three tasks were administered: 1) recognizing environmental print, 2) identifying literacy artifacts, and 3) describing the functions of literacy objects. To measure form and structure of print, six tasks were administered: 1) identifying alternative forms of written language, 2) identifying letter names, 3) identifying letter sounds, 4) blending syllables into words, 5) blending phonemes into words, and 6) constructing invented spellings. The measures were presented to children in two sessions, each lasting approximately 20 minutes. All testing was administered by one of the authors or a certificated teacher who had received training on administering the tasks. The testing was initiated one week following the opening of school. All testing was completed within four weeks following the beginning of the preschool year.

Function of Print- Knowledge of environmental print was measured by showing children ten 4 x 5 color photographs of logos that appeared in context. The child was shown each photograph individually and asked, "Tell me what this says. Point to where it says that." The logos were selected from reports by other authors (e.g., Heibert, 1978; Masonheimer, et al., 1984) of environmental print frequently recognized by prereaders. In each photograph the print and context are clearly legible. The ten photographs consisted of pictures of a McDonald's sign, stop sign, K-Mart sign, cup of Coke, box of crayons, Burger King sign, speed limit sign, school bus, Target sign, and a can of Pepsi (total points=10).

Preschoolers' knowledge of literacy objects was assessed by asking children to identify selected materials that were presented to them. The objects included a newspaper, telephone book, menu, map, dictionary, check book, calendar, coupon, receipt and a postcard (total points=10). Using these same materials, the children were also assessed to determine

their understanding of the function of these materials. Each child was asked, "What do people use this for?" (total points=10).

Form and Structure of Print- Knowledge of letter names was measured by asking children to identify the names of all lower case letters when presented individually on 3 x 5 cards (total points=26). Knowledge of letter sounds was measured by asking children to identify the sounds of the lower case letters presented on 3 x 5 cards (total points=24).

Invented spelling was measured using a modified version of a task developed by Kontos and Mackey (1985). Children were read seven utterances (each a word, phrase or short sentence), and asked to "write down on paper in any way that will help you to remember them". Each of the seven items were scored from zero to eight (total points=56) for sophistication of spelling productions using criteria suggested by Clay (1975).

In the task measuring children's ability to combine syllable segments into words, the child was asked to identify the word after being presented with a verbal utterance consisting of two isolated syllables (e.g., /ze/ /bra/, /el/ /bow/, etc.). Before beginning the task, the child participated in a demonstration with the examiner which allowed the child two opportunities to practice the task. The words used in this task were zebra, elbow, table, pencil, and funny (total points=5). In a similar task designed to measure children's ability to combine phoneme segments into words, the child was asked to identify the word after being presented with a verbal utterance consisting of two isolated phonemes (e.g., /t/ /ea/). Again, prior to administering this task, children participated in a demonstration which provided two opportunities to practice the task. The words used in this task were tea, may, sew, knee, and sea (total points=5).

In the final task children were shown 5 x 8 cards with strings of letters or scribbles, sometimes including numbers, printed on each card (e.g., I, MMM, 57M8R). When the examiner showed each card, she would ask "Is this a word that big people read?" The task was developed to examine children's ability to differentiate among printed forms and

determine what type of print constitutes a word people can read. The task was designed from work reported by Lavine, (1977) and Ferreiro and Teberosky (1982) on what prereaders conceive as readable print. Specifically, the task examined whether variety, multiplicity, and directionality of printed forms influenced children's concept of what people can read (total points=15).

To determine if any of the preschoolers were readers, all preschoolers were also shown isolated words printed on 3 x 5 cards. Words that compiled the fifteen item list were culled from several popular basal pre-primer lists. Each child was shown a word and asked to tell what it says (total=15). If a child could not correctly identify any of the first five words the assessment of beginning reading was stopped.

A questionnaire was also administered to the parents of the preschoolers in this study. The questionnaire consisted of 65 questions and investigated the frequency and quality of the literacy experiences in which parents are likely to engage with their preschoolers.

Analysis- Frequencies were conducted on all variables. In addition, independent t-tests were administered to determine if significant differences occurred between the two groups. The overall literacy performance of subjects was also examined by totaling scores on the nine variables and rank-ordering all preschoolers in ascending order. In a post hoc analysis, subjects who were beginning to read (could identify at least four isolated words) were removed from the two groups and t-tests were repeated to determine if significance would remain stable.

Results

Table 1 shows the means and standard deviations for language concepts of low-and middle-class children at the beginning of preschool. By comparing the differences between the means, four-year-olds from middle-class homes outperformed their low- income counterparts in knowledge of language on eight of the nine variables. Statistically significant differences, favoring middle-class preschoolers, were

reported at the .01 level for children's knowledge of 1) letter names, 2) blending syllables into words, 3) blending phonemes into words, 4) identifying literacy objects by name, and 5) explaining the function of literacy objects. Middle-class preschoolers were also significantly more advanced than their low-SES cohorts in knowledge of letter sounds, at the .05 level.

Figure 1 shows that when the overall scores of children on all nine variables were combined and ranked in ascending order, the scores ranged from 21 to 106, with a median score of 45.5. Seventy-one percent (12 out of 17) of the preschoolers who fell in the lowest quartile represented four-year-olds from poor socioeconomic homes. By examining the bottom half of the class, 69% (22 out of 32) of the scores were from preschoolers from low-SES. Likewise, only 25% (4 of the 16) who were ranked in the top quartile, were from low-SES backgrounds. Together, these data suggest that even by age four, most children from low-socioeconomic environments are at a distinct disadvantage when compared to their middle-class counterparts on knowledge of early language concepts.

In the assessment that investigated how parents foster early literacy experiences among children a statistically significant difference was found between the responses of the two groups of parents on the total score, t (62) = -3.43, p= -.001. Indeed, alarming voids were noted in the homes of low-SES families with few books, infrequent reading to children, and virtually no encouragement for children to pretend read and write.

It was also found that four of the children from the middle-class were beginning to read by correctly identifying four or more preprimer words presented in isolation. Two of these children successfully identified as many as fourteen of the fifteen words. While one early reader was also found among the low-SES group, this child was able to identify only four of the isolated words. Nonetheless, when these "early readers" were removed from the analysis and t-tests were repeated, statistical significance remained stable for differences in

preschoolers' knowledge of 1) letter names, 2) blending syllables into words, 3) blending phonemes into words, 4) identifying literacy objects, and 5) explaining the function of literacy objects. Only preschoolers' knowledge of letter sounds was no longer significant at the .05 level, with a revised p=.09.

Discussion

The initial strand in understanding reading is when young children try to read words in print by relating them to their meanings (Mason, 1984). By examining children's knowledge of environmental print we found no difference between the two groups. Although most agree that identifying logos does not lead to reading decontextualized print (e.g., Masonheimer, Drum, and Ehri, 1984; Heibert, 1978), the role of environmental print in emergent literacy remains unresolved. Goodman (1986) asserts that "the development of knowledge about print embedded in environmental settings is the beginning of reading development..." (p. 7). Children as young as two-years-of age have been noted to identify familiar logos, such as the McDonald's sign (Harste, Woodward, & Burke, 1984; Hiebert, 1978). Nonetheless, it appears that these prereaders read the context rather than the print (Mason, 1980). The findings presented in this paper indicate that preschoolers from low-socioeconomic backgrounds are as equally adept as their middle-class age mates in identifying contextualized print. Perhaps then, these findings indirectly suggest that exposure to environmental print, in and of itself, does not enhance children's literacy development.

A more important aspect of the function of print was tapped by assessing preschoolers' ability to identify the names and functions of literacy objects. Significant differences were noted between the two groups on both tasks. This appears noteworthy, since some authors have asserted (e.g., Teale, 1986; Heath, 1983) that the homes of children from low- SES are equally rich in literacy experiences. Accordingly, literacy activities are an essential part of a family's social process. Therefore, encounters with newspapers, receipts, maps, and other literacy objects are derived from real purposes that can be found in any

home. Our findings, however, raise issues about such claims.

Children of low- SES were less likely than their middle-class cohorts to identify or describe the functions of the ten literacy objects. It seems unlikely that the low- SES homes are void of these artifacts given evidence presented by other researchers (e.g., Teale, 1986; Heath, 1983). Could these differences reflect a limitation in the parent-child interactions associated with literacy objects? A restricted behavior has been reported in the quality and extent of the verbal interaction among parents and children of low-SES during story book reading (e.g., Snow & Ninio, 1986). Perhaps this phenomena may also help to explain four-year-olds' less developed knowledge in identifying the names and functions of literacy objects.

On the other hand, it might be argued that the artifacts selected for this study could have favored the experiences of children from an economical`y stable environment (e.g., menu, map). However, this explanation can not account for the trend found between the two groups. That is, when the means were reviewed for each of the ten items, the pattern was the same, consistently favoring middle-class preschoolers. Therefore, young children's interactions with literacy objects may play an important role in understanding print. If so, recent efforts to introduce literacy artifacts into the dramatic play areas of early education programs seems prudent (Newmann & Roskos, 1990).

Concerning the strand of form and structure of print, Ehri and Wilce (1985) suggest that knowledge of the letter names and sounds, rather than exposure to environmental print enables children to process written language. Notable differences were reported between the two groups on children's explicit knowledge of letter names and sounds. The authors suggest, along with other findings reported in this paper, that this difference may reflect middle-class children's rich network of associations with letters from their more extensive exposure to print.

In regard to children's ability to combine syllables and phonemes into words, again four-year- olds from low- SES were at a disadvantage. Although these tasks were difficult for all preschoolers, children from

middle- class environments were considerably more sensitive to the sound segments in words, than their low- socioeconomic cohorts. This too, may be a result of middle-class-children's richer familiarity with printed language.

No differences were noted in children's ability to spell words that were dictated to them (e.g., cat, little red car, etc). Because of the low scores found among both groups, the invented spelling task does not appear to tap knowledge of written language concepts among very young children. A review of the scores indicates that most preschoolers, at the beginning of preschool, could only produce random letters and letter-like symbols.

Regarding the last variable, identifying readable print, no difference was found between the two groups. That is, preschoolers from both socio-economic groups demonstrated the same capability in determining the type of graphic units that constitute readable words. As Lavine (1977) had reported, all four year-olds could differentiate among scribbles and separate pictures from writing. Moreover, many used multiplicity (words must be composed of enough letters) and variety (words can not be constructed with the same letters) in determining whether or not the written symbols were "words that big people could read". Nonetheless, this measure did not distinguish between the two groups. Therefore, similar to the findings with environmental print, distinguishing among the structural qualities, rather than the phonetic qualities of written text, may not play a substantial role in promoting young children's understanding of written language.

In sum, the findings in this study repeatedly indicate that even as early as forty-eight months of age, children from low-income homes are at a distinct disadvantage when compared to their middle-class age mates on many language concepts. These differences are noteworthy, and reveal a restricted exposure to early literacy experiences that is likely to impair low-SES preschoolers' future literacy development.

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TABLE 1. Means and standard deviations for language concepts of low- and middle- class preschoolers (N=64)

	Low SES		Middle SES		
	M	SD	M	SD	t
Letter Names (total=26)	3.55	5.40	9.29	7.71	3.43**
Letter Sounds (total=24)	.15	.62	1.84	4.00	2.32*
Invented Spelling (total=56)	14.06	5.59	17.13	7.63	1.84
Syllables - Words (total=5)	3.00	1.89	4.45	1.26	3.64**
Phonemes - Words (total=5)	.15	.44	.81	1.35	2.57**
Environmental Print (total=10)	4.61	2.09	5.42	1.54	1.76
Identify Objects (total=10)	2.21	1.39	3.81	1.47	4.47**
Identify Function (total=10)	3.67	1.73	4.81	1.52	2.80**
Identify Readable Print (total=15)	9.21	1.80	8.87	1.98	.72

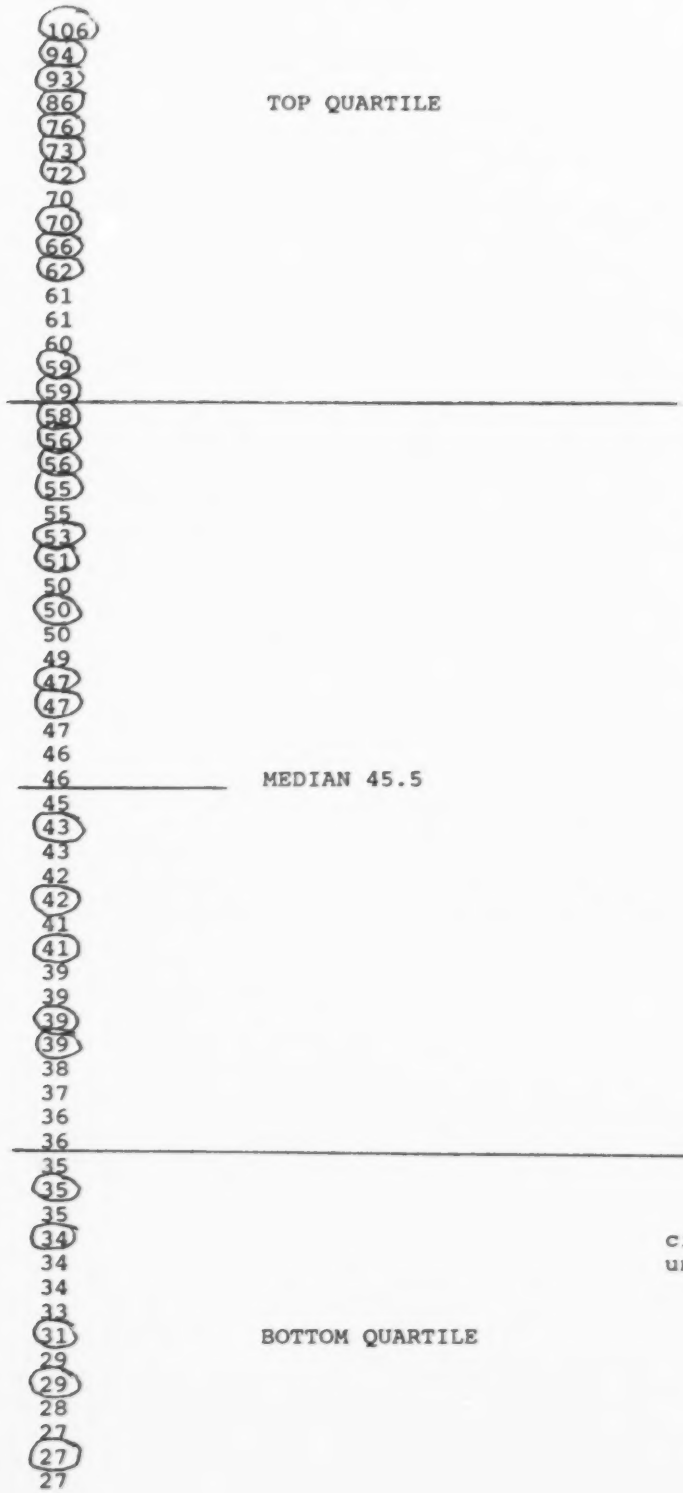

Figure 1. Rank order of total scores on all nine language variables for low- and middle- class preschoolers